

on both sides of the North Sea to severe aerial bombardment had failed to materialize.

For Britain, the lull was largely due to a persisting shortage of bomber aircraft. While the RAF Air Staff, headed by Marshal of the Royal Air Force Sir Charles Portal, urged the creation of a large bomber force, Churchill remained skeptical about the promise that a strategic air

### Europe: 1941-1945

## Europe

us opened in the Balkans and Britain quickly tapered off. tented itself with a series of coupled with some occasional Bomber Command (a raid on ounced as the reprisal for an RAF Bomber Command con- German targets on the Conti- arying between precision and ting daylight attacks. Yet the slow to rise, and heavy losses Prime Minister Churchill re- forces could be accumulated.<sup>2</sup> ver the period from June to ight over the winter, and what of all the civilian population

lom, (London: H. M. S. O., 1957),  
strategic Air Offensive Against Ger-

1941	<i>April 6</i>	German forces invade Yugoslavia and Greece, severely bombing Belgrade
	<i>May</i>	End of the "Blitz" over Britain, as lull begins for bomber operations in Western Europe
	<i>June 27</i>	Germany invades the Soviet Union
	<i>June-November</i>	Moderate RAF bombing offensive against Germany
	<i>December 11</i>	Germany declares war on the United States, after Japanese attack on Pearl Harbor
1942	<i>February 14</i>	Orders issued for RAF Bomber Command "area offensive," serious offensive now to continue for rest of the war
	<i>February 27</i>	Air Marshal Harris appointed head of Bomber Command
	<i>April 14</i>	"Baedeker raids" begin as Luftwaffe retaliation for Bomber Command offensive, continue through the summer
	<i>Fall</i>	First U.S. air forces begin to assemble in Britain
	<i>November 2</i>	British defeat Germans at El Alamein
	<i>November 8</i>	Allied force lands in French North Africa

1943	January 14-24	Casablanca Conference decides to follow dual approach in bombing of Germany
	January 24-29	RAF fire raids on Hamburg kill over 42,000 people
	January 31	Russian victory at Stalingrad, decisive reversal of Germans in Russia
	July 23	Main Russian westward advance begun
	September 3	Italy surrenders to Allies
	October 10	Schweinfurt raid produces heavy losses by United States Army Air Force, in daylight attacks on "precision" ball-bearing targets
1944	February	USAAF introduces long-range fighter escorts
	April	USAAF begins to shift its offensive to German oil supply
	June 6	Anglo-American forces land in Normandy
	June 10	First V-1 flying bombs hit Britain
	August 23	Allied forces liberate Paris, and then move rapidly toward German frontiers
	September 8	First V-2 rocket bombs hit Britain
1945	January 17	Russian forces take Warsaw, moving toward Germany's eastern frontiers
	February 13	Bombing of Dresden, 135,000 people killed
	March 7	American forces cross the Rhine at Remagen
	May 7	German unconditional surrender

offensive directed against morale could win the war without any forcible return to France:

We all hope that the Air offensive against Germany will realise the expectations of the Air Staff. Everything is being done to create the Bombing force desired on

the largest possible scale, and there is no cate, however, placing unbounded confidence, expressing that confidence in terms of impairing the enemy's morale we can enters the war, it would have to be supported by armoured forces in many of the countries. Only in this way could a decision certain

Some of his skepticism was in facing the Blitz:

The Air Staff would make a mistake we were greatly misled by the pictures be wrought by Air raids. This is illustrated by the picture of air raid casualties, picture of air destruction was so exaggerated, responsible for the pre-war policy, and Czecho-Slovakia in August 1938. Again taught us sedulously to believe that if say nothing of France, our position was. However, by not paying too much attention to good means of keeping going.<sup>4</sup>

Morale attacks might not remain self too well in the conquered territories

It may well be that German morale very important part in bringing the re move simultaneously, and it is quite probable 1943 will be so widely spread throughout of the actual buildings in the home

Industry had, therefore, to be reinforced of bomber aircraft, and some border coastal patrols and antisubmarine offensive capacity would now grow

On the German side, the lull that the West was mainly due to the East, where Luftwaffe operations a totally absent. In his anger at the

<sup>3</sup> Text in *ibid.*, p. 184.

<sup>4</sup> *Ibid.*

<sup>5</sup> *Ibid.*



destroying more than half of the B-17s, and forcing an early withdrawal of the remaining bombers to the south.<sup>3</sup>

The Japanese attack on Pearl Harbor itself had been entirely absorbed by the naval and military installations on Oahu, and only one stray bomb

### Overseas: 1941-1945

1941	<i>December 7</i>	Japanese attack on Pearl Harbor and U.S. air bases in the Philippines
1942	<i>February 15</i>	Fall of Singapore, followed by invasion of Dutch East Indies
	<i>April 18</i>	Doolittle bomber raid on Tokyo
	<i>May 6</i>	Surrender of last U.S. forces in Philippines
	<i>May 7</i>	Japanese southward naval progress halted in Battle of the Coral Sea
	<i>June 4-7</i>	Battle of Midway. Japanese repulsed in attempt to capture island base in mid-Pacific
	<i>August 7</i>	U.S. landings in Guadalcanal
1943	<i>June-October</i>	U.S. attempts, unsuccessfully, to establish air supremacy in China
1944	<i>June 16</i>	First B-29 raid on Japan, from bases in China
	<i>June</i>	Japanese launch major offensive in China to seize B-29 bases
	<i>July 18</i>	U.S. capture of Saipan, in Marianas Islands, leads to fall of Tojo Cabinet in Japan
	<i>September 8</i>	Octagon (Quebec) Conference convened, decides invasion of Japan will be necessary
	<i>November 26</i>	First B-29 raid on Japan (Tokyo) from Marianas

<sup>3</sup> *Ibid.*, pp. 88-90.

1945 *January*

*March 9*

*May 7*

*August 6*

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*August 14*

had fallen into the city of I the Philippines, and in Malay primarily military targets and pattern of deliberate terror-b in China was thus not repe had at times felt themselves ta experiment with bombings military weakening. In the immediately following Pearl targets that would not soon fal was no lack of "force" target avoidance of terror-bombings c ernment, a similar discrimina tactical successes hopefully w capability. The Japanese gover restraint in August of 1941, p indiscriminate bombing in C ever).<sup>6</sup>

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<sup>4</sup> See Walter Lord, *Day of Infamy*.

<sup>5</sup> See P. M. S. Blackett, *Military a don: Turnstile Press, 1948*), p. 29.

<sup>6</sup> *Foreign Relations of the United 1943*), p. 722.

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1945 January

March 9

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August 14

B-29s leave China as result of  
Japanese ground offensive

First "area attack" by USAAF on  
Tokyo, killing 83,000 people

German surrender in Europe

Atomic bomb dropped on Hiro-  
shima

Second atomic bomb dropped  
on Nagasaki

Japanese surrender

had fallen into the city of Honolulu.<sup>4</sup> The ensuing Japanese attacks in the Philippines, and in Malaya and Burma were similarly directed against primarily military targets and did not seriously touch residential areas. The pattern of deliberate terror-bombing of cities characterizing the campaign in China was thus not repeated.<sup>5</sup> The Japanese Army leaders in China had at times felt themselves tactically stalemated, and had been tempted to experiment with bombings designed for persuasive effect rather than military weakening. In the campaigns of rapid, southward expansion immediately following Pearl Harbor, however, there were few "value" targets that would not soon fall into Japanese hands in any event, and there was no lack of "force" targets to keep the Japanese bombers busy. This avoidance of terror-bombings could also induce, in the view of the Tokyo government, a similar discrimination on the part of the Allies, while Japanese tactical successes hopefully would serve to eliminate the Allied bombing capability. The Japanese government had already hinted at a new policy of restraint in August of 1941, promising the United States that it would end indiscriminate bombing in China (a promise not immediately kept, however).<sup>6</sup>

But any such hopes for Allied restraint were, in any event, soon to be disappointed. U.S. projects for an early strike against the homeland of Japan had been under development since well before Pearl Harbor. While

<sup>4</sup> See Walter Lord, *Day of Infamy*, (New York: Henry Holt and Co., 1957), p. 158.

<sup>5</sup> See P. M. S. Blackett, *Military and Political Consequences of Atomic Energy*, (London: Turnstile Press, 1948), p. 29.

<sup>6</sup> *Foreign Relations of the United States: Japan 1931-1941*, (Washington: U.S.G.P.O., 1943), p. 722.



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## Chapter XI

### Conclusions

#### RELEVANCE TO THE PRESENT

It has been argued here that the past "bomber menace" may still tell us something about human reactions to the continuing nuclear threat.

→ For while weaponry changes rapidly, human brainpower changes little, if at all; if people four decades ago believed that they possessed today's weapon systems, then we may have a natural "simulator exercise" in many ways superior to any we could attempt to erect artificially.

Extremely effective disabling capabilities (what today are sometimes broadly or narrowly labeled as "counterforce" capabilities) were, over this period, assumed to exist in the airplane; similarly impressive pain-inflicting capabilities (which today might be labeled "countervalue") were also assumed. And on the basis of such assumptions of military technology, a great deal of strategic theory, moreover, did follow.

Human beings have not been especially happy, of course, to share such problems for so long; in terms of safety and serenity, the advent of very effective disabling and terror weapons has been seen as a distinctly unfortunate development. Hopes have, therefore, quite logically been expressed and efforts expended that such threatening weapons be, somehow, eliminated or neutralized. The occasional gratification and more general frustration of such attempts to escape the strategic dilemma suggest parallels with more recent attempts.

Turning to the strategic problem itself, the *absolute* speeds of the air capabilities are, of course, of some importance, if comparisons are to be

drawn with the present. No one could be able to disarm an enemy; an enemy armed himself in such a short time as to permit a two hour heating or giving a two hour heating of a bombing exchange, to develop a monopoly of airpower perhaps abilities were also calculated abilities were thought necessary to kill the stability problem is, to a large extent, one of disabling and pain-inflicting dilemma of the 1920's again so cause massive retaliation might have been quickly erased, so that the deterrence of the enemy's calculations would thus be such deterrence would fail. Sometimes seen today are therefore times are "the same"; will human ac-

#### THE HOPE OF NEUTRALIZING

Few situations, in fact, have a threat were to be perfectly neutralized might counterproductively have infliction of such bombing on a difference to bombing could government and people, such that be unresponsive to the masses. A phenomenon is rarely found in any of the twentieth century war. Every nation, concerned concern, at some time, under the interim damage inflicted moreover, including Japan, has leadership for the populace that

Churchill's decision in 1940 may have been primarily intended been his decision in 1914 to against his shipyards and arms



drawn with the present. No one until very recently actually expected to be able to disarm an enemy air force in two hours, or feared being disarmed himself in such a short time. Nonetheless, it was assumed that getting or giving a two hour head start would decisively settle the outcome of a bombing exchange, to determine which side would achieve a monopoly of airpower perhaps at the end of two days. Pain-inflicting capabilities were also calculated as moving more slowly in this period: days were thought necessary to kill millions of civilians rather than hours. Yet the stability problem is, to a large extent, based on the *relative* speeds of disabling and pain-inflicting capabilities, and this makes the strategic dilemma of the 1920's again seem very similar to that of the present. Because massive retaliation might come too slowly as retaliatory capabilities were being quickly erased, situations were foreseen, then as now, where the deterrence of the enemy would be cast into doubt, and where military calculations would thus call for pre-emptive attack if (but only if) such deterrence would fail. Some of the strategic threats and opportunities seen today are therefore the same as those seen then; human beings are "the same"; will human actions also be "the same"?

#### THE HOPE OF NEUTRALIZING TERROR

Few situations, in fact, have arisen where the threat of painful air attack could be removed or made meaningless for any of the powers; if the threat were to be perfectly neutralized for only one nation, moreover, it might counterproductively have led, in some circumstances, to an early infliction of such bombing on other nations. It can be argued that an indifference to bombing could come from a lack of identification between government and people, such that rulers in their bombproof shelters would be unresponsive to the masses lacking such protection. But such a phenomenon is rarely found in any of the societies that would be involved in twentieth century war. Every nation involved, possibly excluding Japan, has evidenced concern, at some time, that its population might buckle and defect under the interim damage inflicted by bombing. Every nation involved, moreover, including Japan, has also evidenced a sympathetic concern of its leadership for the populace that suffered this damage.

Churchill's decision in 1940 to escalate the air war and expose London may have been primarily intended to preserve his military force, as had been his decision in 1914 to pre-empt the Zeppelin attack he expected against his shipyards and armories. But Britain, in World War I, could not

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demonstrate any resolute insensitivity to the suffering of London, and in 1940 both Churchill and his electorate were more afraid of invasion than of bombing. Hitler's actions, throughout World War II, similarly showed a deep concern for the fate of his cities, and the Japanese decision finally to surrender illustrated a substantial identification of the leadership with the populace. Some might argue, historically, that Churchill was able to be more callous than the Japanese leadership, that both Hitler and the Japanese government felt more driven to action by the fate of their weakest citizens than did the British Prime Minister. Such an interpretation would seem paradoxical in face of our standard characterization of wartime Britain as a democracy, and of Germany and Japan as unresponsive dictatorships. A more balanced interpretation would find little correlation, in either direction, between democracy and sympathetic responsiveness to civilian suffering, but would trace the differences in policy instead to other factors.

A connection of sympathy has thus existed in most cases between decisionmaker and population; in most cases, there has also been a fear of incapacitation; at the extreme, the reaction of the public to fears of bombing could induce a revolt, but with luck it might develop only into a general hindrance of the national war-making capacity. The British experience of 1916-1918 is, in many ways, the most startling. Much of the British official apprehension of 1939, in fact, originated in the ugly incidents of 1917, with the fear that mob action might frustrate any decision to resist German demands. In Britain, steps had been taken by 1939 to attempt to control a rebellious population, and to greatly augment the police force if the indiscipline of 1917 repeated itself; in the actual event, for psychological reasons to be cited, no such measures had to be put to the test. The French government similarly expressed fears of rebellion, or defection, if any bombing raids occurred (but no such raids on France were carried out to prove or disprove such fears). Thus, even "democratic" governments had, by 1939, felt some aversion to having their hand immediately forced by popular fears of bombardment; inefficiency and absenteeism among factory workers might have to be tolerated, but rioting, strikes, and rebellion, hopefully, would not. Yet, while hoping for the power to ignore popular suffering in the short run, none of these states (democratic or totalitarian) were particularly willing to try to do so for any length of time.

Governmental indifference to air attack has thus largely depended on popular indifference, and, therefore, on the offering of some palliative, allowing citizens either to endure or to forget such attack. Such

palliatives for air attack could, for sympathetic observers, might find which "subjectively" drives him to vicariously lament. (This distinction is one.)

A "real" palliative for public "hardening" of the human target, vulnerable to terroristic air attack, was effected in France. When measures were introduced, gas masks were issued, and gas masks were used. Yet such measures never promised to reduce the suffering incurred in a bombing raid close to their factories, and as long as they were still to function. The more the sense of the futility of the effort to prevent terroristic attack, the more little effort was expended over time. The few occasions where such measures, logically within reach proved of little use, the prediction that "the bomb" was generally accepted. But the size of the threat was overestimated in peacetime, with the result that bombers has often (as in 1940) been used; the side being attacked might be perhaps, the exaggerated hopes.

In the past, therefore, "objective" security has been promised and not delivered. It has been shown to be imaginary. "Subjective" security existed again, but it was through a defensive technology that does not, however, seem certain to be over, only rarely been present. Subjective and objective even applies. This very issue of what destructive capability is not. While the disabling capability in objective terms of casualties and "countervalue," capability is held to be a variable still, perhaps, very much assumed.

Punishing attacks which are h



the suffering of London, and in the more afraid of invasion than World War II, similarly showed the Japanese decision finally a confirmation of the leadership with which, that Churchill was able to cope, that both Hitler and the reaction by the fate of their weak minister. Such an interpretation and standard characterization of war—any and Japan as unresponsive—would find little correlation, and sympathetic responsiveness differences in policy instead to

and in most cases between decisions there has also been a fear of opinion of the public to fears of lack it might develop only into making capacity. The British experience most startling. Much of the attack, originated in the ugly incident might frustrate any decision that had been taken by 1939 to stand and to greatly augment the potential itself; in the actual event, such measures had to be put to use expressed fears of rebellion, (but no such raids on France occurred). Thus, even "democratic" opinion to having their hand immobilized; inefficiency and above all to be tolerated, but rioting, not. Yet, while hoping for the short run, none of these states is fully willing to try to do so for

has thus largely depended on the offering of some palliative or to forget such attack. Such

palliatives for air attack could produce an indifference which we, as sympathetic observers, might find "real" and "objective," or an indifference which "subjectively" drives humans to accept destruction which we might vicariously lament. (This distinction may yet, in fact, prove to be an empty one.)

A "real" palliative for public fears has at times seemed available in a "hardening" of the human target, making the populace less physically vulnerable to terroristic air attack. Evacuations, either planned or spontaneous, were effected in France in 1938 and Britain in 1939; civil defense measures were introduced, gas masks distributed, shelters built and marked. Yet such measures never promised to relieve more than a small fraction of the suffering incurred in a bomber attack, as long as workers had to live close to their factories, and as long as cities had to function if the nation were still to function. The more basic hope of achieving an active air defense completely to prevent terror attacks was also entertained, and not a little effort was expended over the period to achieving such a protection. The few occasions where such active defense was thought to be technologically within reach proved quite disappointing, however, and in peacetime the prediction that "the bomber will always get through" was more generally accepted. But the size of enemy air forces has also normally been overestimated in peacetime, with the result that a limited wartime use of bombers has often (as in 1940) disclosed a previously unsuspected weakness; the side being attacked may thus lose its exaggerated fears (but not, perhaps, the exaggerated hopes for its own air forces).

In the past, therefore, "objective" or physical protection has, at times, been promised and not delivered, while threats at other times have conversely been shown to be imaginary, with the result that a "real" or "objective" security existed again. Such a "real" physical security, either through a defensive technological breakthrough or an offensive default, does not, however, seem certain to remain with us today, and it has, moreover, only rarely been present in this century. More "subjective" palliatives have been generated here, if indeed the distinction between subjective and objective even applies. For nothing is in fact more subjective than this very issue of what destruction or punishment is "acceptable," and what is not. While the disabling capabilities are simply specified in the real and objective terms of casualties and exchange rates, the pain-inflicting, or "countervalue," capability is heavily dependent on how people see "value," a variable still, perhaps, very much less predictable than we might have assumed.

Punishing attacks which are highly undesirable in one environment may



become meaningless as deterrents in another, if other considerations come to outweigh or blot out such fears. As war goes on, in a restrained or limited form, casualties are being inflicted on the young men of the nation's armed forces. When sons are lost while cities remain intact, the value the public attaches to its cities may relatively decline, and any particular "destructive" threat may thus become less frightening. (This may be so at least as long as domestic sacrifice seems likely to involve some battlefield gain; if prospects for military victory are also missing, however, the bombing of a city can, instead, induce the loss of all hope.) The air threat may thus be outweighed whenever a more severe threat of conventional military defeat exists to divert the concerns and priorities of the populace. France, in World War I, and Britain, in 1940 (but not in 1939), illustrate a "realism" about the severity of bombing, derived not so much from superior analytical talents, as from involvement in the threat of being overwhelmed by conventional surface military forces. Thus, French strategic air efforts in 1914 were based only on the hope of an attrition of German industry, and were abandoned when the relationship of returns to costs seemed more appropriate at the front lines. When the Maginot Line served between the wars, however, to ease French fears of invasion, the public's imagination turned to the threat from the air. Similarly, British willingness to accept the bombing of cities rather than suffer a cross-channel invasion in 1940 led to reduced and more realistic estimates of German bombing capacity—estimates which even yet were exaggerated.

Closely related to these forms of "diversion" is the support bomber "reprisals" give to expectations of ultimate victory. If the enemy is suffering too, while we are being hit, there is at least a chance that he will buckle before we do, in which case our suffering will end, and his surrender will give us rewards to make up for it. Thus, the hope of a victory through air attack is also a potent palliative—one sometimes difficult to separate, in specific cases, from that of "a sense of justice," discussed below. Semiconscious assumptions about the opposition's tolerance of bombing, as with the British in World War I, can, therefore, improve one's own tolerance. Wars, moreover, are also often seen as discrete ventures for which the nation must show a victorious "profit." In such a calculus, losses born early in the war are not merely written off, but are translated into a popular penalty which may be inflicted on the incumbents at the end of the war, if they do not provide sufficient benefits of victory to outweigh these losses. The spoiler raid thus may not only remove restraints from the victim, but may also add incentives for him to pursue total victory even more intensively, even by the abandonment of other restraints.

The process of communication creates anomalies in which the threat is more crucial than the destruction itself. In some cases, and forcing it in other cases, the offering of military action, is the offering of a certain nonrational, to the people. This palliative in a series of "reprisal" raids. The very inauguration of the services had stemmed, in part, from the effects of the British blockade on the people, and for the occasion of this public demand as "satisfaction" of enemy suffering has served if no more rational argument could make our threat to mass destruction strategically lost.

Offering a slightly different above-mentioned issuance of threats have led the inhabitants of various countries to severe punishment in raids to live up to expectations of a happy surprise. A parallel analysis might argue that today the most horrible forms of war are preferable if we are not in a "prewar" period. Improbable that we will, this time, of a terror war, that it would now expect.

Without attempting to propose hypotheses can be ventured. A prepared population, which has expected before the war, but when to "how bad" things will be compared population, deeply in threat is predictable and may result to exceed authoritative has a two-step adjustment



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The process of communication between government and people can thus create anomalies in which the *conception* of painful destruction is more crucial than the destruction itself, freeing the government's hand in some cases, and forcing it in others. Another type of palliative, forcing further military action, is the offering of revenge (of "an eye for an eye"), which delivers certain nonrational, or psychological, compensating satisfactions to the people. This palliative was the one given the British public in 1917, in a series of "reprisal" raids which blossomed into something more. The very inauguration of the bombing exchange by the German Zeppelin services had stemmed, in part, from a similar desire to retaliate for the effects of the British blockade on the living standards of the German people, and for the occasional Allied bomber raids. Whether one describes this public demand as "sadism" or as a "sense of justice," the assurance of enemy suffering has served again and again as a morale builder, and if no more rational argument were to exist, might suffice today to make credible our threat to massively retaliate even when a war was already strategically lost.

Offering a slightly different palliative, "alarming" steps, such as the above-mentioned issuance of gas masks and civil defense instructions, have led the inhabitants of vulnerable cities to expect the worst, to resign themselves to severe punishment, with the result that the failure of bombing raids to live up to exaggerated prewar estimates came almost as a happy surprise. A parallel can be drawn here with today's debate on a "thinking about the unthinkable." Some sober advocates of systems analysis might argue that today's vague perceptions tend to exaggerate even the most horrible forms of war, and that careful examination of such war is preferable if we are not to be needlessly blackmailed into concessions in a "prewar" period. Implicitly, the proof of such an argument would be that we will, this time, be almost pleasantly surprised by the nature of a terror war, that it would, at most points, be more bearable than we now expect.

Without attempting to probe deeply into mass psychology, some hypotheses can be ventured. Aerial bombing can be inflicted on an unprepared population, which has not been extremely intimidated by this prospect before the war, but which now lets its imagination wander wildly as to "how bad" things will get. It can also touch a psychologically prepared population, deeply intimidated heretofore, which will feel that the threat is predictable and manageable, when it notices the failure of assaults to exceed authoritatively predicted levels of damage. There is perhaps a two-step adjustment process here, involving both the introduction



of the idea of terror attack, and its circumscription. At its uncircumscribed stage, the prospect can induce panic; Britain, in 1914, more or less illustrates the "unprepared" case, Britain, in 1940 (or perhaps Germany in 1944), represents the other. States may well be forced to choose between prewar intimidation and wartime panic. A palliative for one may undo the palliative for the other.

Other palliatives are available. The defenders may also become indifferent to further attacks if the first raid inflicts "all the damage" that could have been feared. "Values" are molded in terms of the thoughts people have about their surroundings. Destruction which is quantitatively interpretable as a "one city" attack has, at times, been qualitatively interpreted at the receiving end as the "end of safety for cities in this war." Such broad qualitative distinctions, couched in terms of "the war," are easily found in the promises populations exact from their political leaders during a "peace." Both sides, therefore, may come to attach much more importance to the first increments of destruction which invalidate promises of "no exposure to air attacks" or "no bombing of cities," than to succeeding increments; bargaining constraints of considerable magnitude thus have been removed at the first use of such force (as in the 1940 British raids on Berlin) and might not be reproduced for the rest of such a war, until a new "peace" appears from which new qualitative distinctions can be dated.

Vicariously, one might lament less an exposure to air attack where civil or air defenses had made such an attack less objectively destructive; yet it accomplishes little to lament other sources of indifference, such as the fact that severe bombing can be simply preferable to the costs of avoiding it, or that one can become psychologically enured even to the horrible. Instances of national indifference to bombing have not occurred very often historically, but often enough to set the stage for such attack, and often enough to pose a real problem for the humanitarian observer who is himself perhaps more interested than the victims in preventing such an attack.

#### THE HOPE OF NEUTRALIZING THE OFFENSIVE ADVANTAGE

Few escapes have similarly seemed available in this period from the destabilizing possibilities of offensively superior air weapons. While some analysts have assumed that the system imposed by the striking power of aircraft was either desirable or inevitable, many have argued that some

technological change should be the system, thus to allow a parity laterally. Until some successful defense, however, no nation could seriously jeopardizing its own position would normally feel vulnerable to the inadequacies of surveillance such a parity in doubt. (After hoped to change the casualty equation by drastically reducing the number of attacks, the only way to increase the dangers by undetected cheating; monitoring sufficient to reassure nations at never to be established.)

Today's "finite deterrence" presumes the assumption that the normal balance has been technologically erased. When a nation has a moderate advantage, a nation may feel dominated. One could acquire advantages, only by procuring more weapons; "finite deterrence" is rather of maintaining only a retaliatory capability (and implicitly for one's neighbor) at force levels. When the defense has a risk engendered by normal uncertainty, inventory can at last be undergirded; what was previously required can then be given.

Any sure escape from the threat of the disabling advantage of aircraft was expended here to supply the need. Some of such efforts were inventions a development of flak in Germany, the development of runways for delivery systems with the case that a smaller force of aircraft could be a larger one on the ground. The concealable missile may provide a stability dilemma, but despite such an innovation, none has appeared that striking first would not be m



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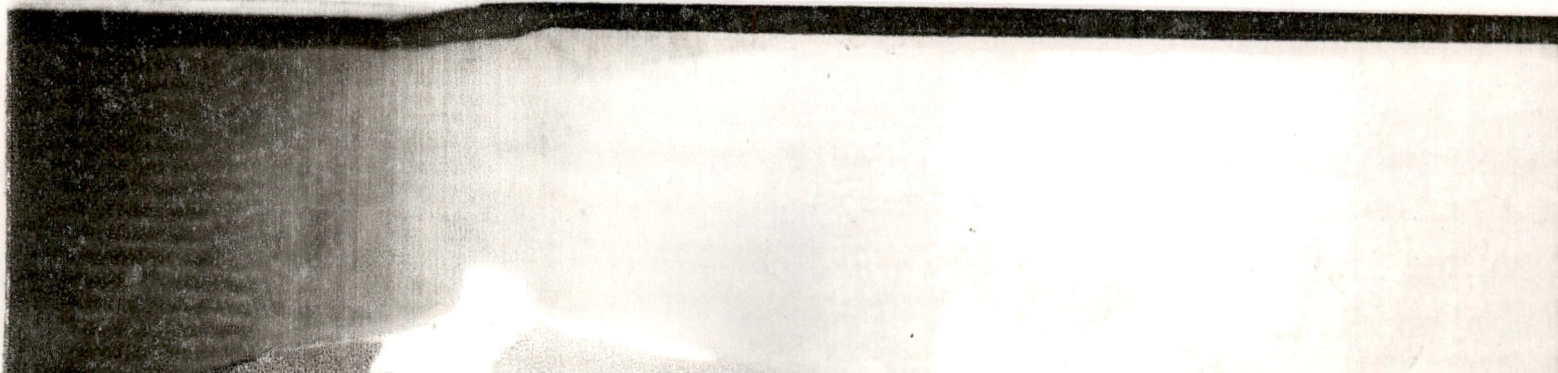
#### ADVANTAGE

le in this period from the or air weapons. While some sed by the striking power of any have argued that some

technological change should be sought to reverse the characteristics of the system, thus to allow a prudent nation to stabilize the peace unilaterally. Until some successful technological assistance was given to the defense, however, no nation could offer security to its neighbors without seriously jeopardizing its own safety. With equal-sized forces, each nation would normally feel vulnerable to a surprise attack by the other; the inadequacies of surveillance, moreover, would always leave even such a parity in doubt. (After World War I, British leaders, in fact, hoped to change the casualty exchange rate in favor of the defense by drastically reducing the numbers of aircraft in each country, but this could only increase the dangers of an honest nation being overwhelmed by undetected cheating; monitoring channels or inspection procedures sufficient to reassure nations at such reduced levels of weaponry were never to be established.)

Today's "finite deterrence" proposals have become plausible only with the assumption that the normal military superiority of the air offensive has been technologically erased. When the defense has, at last, been given a moderate advantage, a nation might feel secure without making another nation feel dominated. One could disable an enemy, in face of such defensive advantages, only by procuring a substantial numerical superiority in weapons; "finite deterrence" is the policy of choosing not to do so, but rather of maintaining only a retaliatory, pain-inflicting capability for one's self (and implicitly for one's neighbors) by a careful matching of lower force levels. When the defense has thus been technologically revived, the risks engendered by normal uncertainties about the size of an opponent's inventory can at last be undergone, and some of the delivery vehicles previously required can then be given up.

Any sure escape from the threat of instability posed by the offensive disabling advantage of aircraft had to be technological. Much effort was expended here to supply the defensive technology; among the fruits of such efforts were inventions as significant as radar in Britain (and the development of flak in Germany). But until the need for vulnerable runways for delivery systems was done away with, it was still always the case that a smaller force of aircraft aloft could destroy or immobilize a larger one on the ground. The advent, in the 1950's of the hardened or concealable missile may provide such a technological escape from the stability dilemma, but despite the many earlier concerns expressed for such an innovation, none has appeared any sooner to convince observers that striking first would not be militarily very advantageous.





## RESTRAINT AND SOPHISTICATION

Since a reliable elimination of the bombers' disabling and pain-inflicting capabilities could not be accomplished in this period, the achievement of a secure peace has remained doubtful. The threat of interim punishment would still have to outweigh the military advantages of the offensive first strike at the "strategic" level if a quite horrendous war is to be avoided. All use of bombers might hopefully be deterred in such a strategic confrontation. And if the threat of responsive terror-bombing could be credibly extended, it might also inhibit the use of more "conventional" or "tactical" weapons, or even of some competitive practices of the most nonmilitary nature.

Yet problems remain. A marked increase in the presumed likelihood of war still might stampede nations into pre-emptory actions thereby producing a war. The threat of interim punishment might, moreover, *not* be so credible against lesser attacks at the tactical level, where the advantages of the defense would then have to suffice as a deterrent. A nation quite averse to an unrestrained bomber war might thus still attempt a local or otherwise mutually restrained introduction of bombers, preferring this limited use to no use at all. Alternatively, conventional surface weapons might still be used, under an "umbrella" of restrained strategic bomber strength. Yet this "limited" war at the tactical level might, moreover, supply precisely the apprehension and crisis necessary to upset the unstable over-all balance and trigger a general war.

An over-all precariousness of the balance would, of course, contribute somewhat to deterring the lesser conflicts that could upset it, in effect making the threat of massive punishment for small aggressions credible once more. But where the over-all peace seemed more stable, limited wars again might break out more often.

The term "limited war" has at times been used to refer to wars in which less than the maximum of possible destruction is inflicted, and in which less than the totality of weaponry is used. All war, however, are limited in this sense, for the straightforward reason that many possible destructive acts do not, in themselves, serve the interests (physical or moral) of the attacker; no power, therefore, destroys as much as it is able to destroy. Of more significance instead, with the advent of significant terror weapons, are the limits or restraints which are maintained only because an opponent is thought to be maintaining some restraint in exchange. A "bargaining" process applies here in which each side leaves

something (but not everything) of his ability to destroy it. This has always been with us, it is the introduction of air weapons.

It is clear that no mutual restraint when one side can prevent retaliation of an overwhelmingly rapid, decisive interim retaliation is, however, the completion of the disarmament to be in effect. The maintenance of a deal of circumspection on the part involved, if an escalation to war.

The adaption of the aircraft carrier to a war which was already fought or limited use of bombers were have been if the war had begun of relatively conscious exchange which seemed about to break above, only British rear areas real symmetry of the exchange target selection, in a conforming, at last, of a strong response proposed newer and more explicit to the battlefield; these rules because the new rules seemed Allies now felt that they could

The British attempt between bombers in Europe while retaliation similarly parallels more recent wars; bombers would have been "Zis" of the major powers. somewhat different in that other with the local forces that Britain. While Germany, especially in advantage in an Arab or Afghanistan to British use of bombers facilitate the reintroduction of were, in a sense, the reverse raise the specter of escalation



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has been used to refer to wars in which the destruction is inflicted, and in which it is used. All war, however, are justified by the reason that many possible to serve the interests (physical or moral), destroys as much as it is justified, with the advent of significant means which are maintained only by maintaining some restraint in the state here in which each side leaves

something (but not everything) of value to the other, while reminding him of his ability to destroy it. While such a reciprocal limitation process has always been with us, it did not become extremely important until the introduction of air weapons.

It is clear that no mutual restraint can be in effect, by this definition, when one side can prevent retaliation by the other (by means, perhaps, of an overwhelmingly rapid, disabling capability); conversely, where the interim retaliation is, however, clearly sufficient to take hold before the completion of the disarming strike, some mutual restraint is likely to be in effect. The maintenance of such a restraint, then, requires a great deal of circumspection on the part of the political and military leaderships involved, if an escalation to unrestrained "all-out" war is to be avoided.

The adaption of the aircraft to military purposes developed in the midst of a war which was already fairly "general," and distinctions as to local or limited use of bombers were not as extensively elaborated as they might have been if the war had begun more gradually, or locally. Yet a series of relatively conscious exchanges of restraints were in evidence, a series which seemed about to break down completely in 1918. As pointed out above, only British rear areas were extensively bombed at first, and the real symmetry of the exchange came in this nebulous region of military target selection, in a conformance to the "laws of war." With the mounting, at last, of a strong response by the British in 1917, the Germans then proposed newer and more explicit limits, based on geographical proximity to the battlefield; these rules for "local war" were rejected by the Allies because the new rules seemed unfair and, more importantly, because the Allies now felt that they could force a German surrender by all-out air war.

The British attempt between the wars to bar the use or existence of bombers in Europe while retaining them for police purposes in colonies similarly parallels more recent arguments as to weapon uses in limited wars; bombers would have been useable only in areas away from the "ZIs" of the major powers. This "local war" argument was, however, somewhat different in that other major powers did not normally identify with the local forces that Britain and France might be trying to suppress. While Germany, especially under the Nazis, might have seen some advantage in an Arab or Afghan engagement with Britain, her major objection to British use of bombers in such an operation was that it might facilitate the reintroduction of bombers to Europe. Thus, the arguments were, in a sense, the reverse of those currently presented. The Soviets raise the specter of escalation perhaps because they legitimately fear the



effects of high-yield bombing in the local area *per se*, while Nazi Germany voiced opposition to the local use of bombing primarily because it legitimately feared escalation.

Warnings about the dangers of escalation may, in fact, have been quite realistic, in addition to serving as intimidating propaganda. The chronic inaccuracies of air navigation and bomb aiming have served as a major impediment to the survival of any geographic restraints. Overoptimism about navigation several times has tempted nations to count on the recognition of distinctions of restraint which could not really be recognized; the nonrecognition of such restraints then led, in turn, to the deliberate abandonment of parallel restraints.

Several borderline forms of restraint, often labeled as "limited strategic war," are widely discussed today. One, a discrete and relatively "painless" disarming of an enemy, is, in ways, historically exemplified in the German attempt to destroy the RAF in 1940. While a form of mutual restraint still remains in effect during this process, it would end, by the definition above, if and when the counterforce operation were successfully completed, for one side would have no terror instrument left to restrain. In the actual event, the 1940 attempt led to British escalation and all-out bombing. Another form of limited strategic war involves a limited terror attack or "limited strategic retaliation," whereby a state attempts to deter some operation of its opponent, by an obviously restrained infliction of pain. Such limited pain-inflicting operations might be steady, or in pulses clearly attached to specific events. Historical equivalents of such "limited strategic war," in the form of pulsed terror attacks, are also to be found in the single retaliatory blows of World War I, and in the World War II Bae-deker raids. No permanent escalation was involved here, but rather a "tit for tat" form of terror offensive explicitly restricted in duration, thus leaving most of the hostage unharmed, so that his government will continue to have an incentive to bargain.

One can now ask whether history shows that the threats of air weaponry have in fact been accompanied by sophisticated examinations of interacting restraints. When severe or unrestrained airborne violence was encountered in this century, was it because men proved unwilling or unable to analyze the "modern" strategic questions, or was it because these questions had, on one side, become irrelevant?

By its very nature, air warfare has been a very thoughtful process. Unlike a continuous trench war involving attacks on whatever the enemy sends across, air bombardment has involved single, discrete excursions

which cross, and leave unscathed, possibly finding the most desirable, air bombardment from it in preference to targets of opportunity, still had to pass over the (or most politically important,

Few strategic bombers have they could find; the overwhelming a calculation process with destruction. From deliberation step to deliberation about delicate fare seemingly suited for motives and by apparent opportunities the air. Decisions to hold back, not motivation abound. Even to initiate or escalate operations sophisticated sort. A decision to hit villages to punish guerrillas, decision to bomb Berlin in the Italian raids on Barcelona, gas attack on Berlin in 1918 a

If one is concerned as to whether it is useful to consider the requirements of a military decision, the evidence of the past. Terror-bombing has not been congenitally unwilling or uninvolved exercises in deterrence deeper than this, going to the opportunities are apparent) and opportunities). Where a strong interest, the "right" questions have at times, with crucially wrong between sophistication and achievement than the former. Situations have, for one reason or another, destruction, and the achievement relevant. Inevitably, these experiences verge, for the miscalculations into a situation of indifference



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may, in fact, have been quite good propaganda. The chronicling have served as a major inhibitory restraints. Overoptimism leads nations to count on the record which would not really be recognized; and, in turn, to the deliberate

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very thoughtful process. Un-acks on whatever the enemy ed single, discrete excursions

which cross, and leave unscathed, hundreds of possible targets until supposedly finding the most desirable one. Even more so than in naval warfare, air bombardment from its inception has involved targets of choice in preference to targets of opportunity. The worst city-busting raids, in fact, still had to pass over the smaller border towns to go for the biggest (or most politically important, or most historically significant) city.

Few strategic bombers have been sent out merely to hit whatever they could find; the overwhelming proportion of such operations has involved a calculation process which took time to mull over the object of destruction. From deliberation about target complexes, it is but a short step to deliberation about deliberation. If ever there was a mode of warfare seemingly suited for motivational purposes, both by level of painfulness and by apparent opportunity for discrete operations, it was that of the air. Decisions to hold back on air operations for calculations of opponent motivation abound. Even the major decisions to go ahead and strike, to initiate or escalate operations, have normally been of a thoughtful and sophisticated sort. A decision by a ground force commander to start burning villages to punish guerrilla supporters might be spontaneous; the British decision to bomb Berlin in 1940, the Japanese pre-emption in 1941, the Italian raids on Barcelona in 1938, and the projected Allied poison gas attack on Berlin in 1918 and 1919 were not.

If one is concerned as to whether strategic planners will now be careful to consider the requirements of mutual restraints when making serious military decision, the evidence is that they have often done so in the past. Terror-bombing has not beset the world because planners have been congenitally unwilling or unable to be sophisticated or to engage in involved exercises in deterrence and coercion. The problem is, indeed, deeper than this, going to questions both of human perception (what opportunities are apparent) and of preference (how men react to apparent opportunities). Where a strong aversion to bombing destruction has existed, the "right" questions have normally been asked, only to be met, at times, with crucially wrong answers. If a distinction can be drawn here between sophistication and accuracy, the latter has been more of a problem than the former. Situations have arisen, moreover, where nations have, for one reason or another, become indifferent to threats of future destruction, and the achievement of restraints had, therefore, become irrelevant. Inevitably, these explanations for the breakdown of restraints converge, for the miscalculations of one side can easily enough drive the other into a situation of indifference.



Churchill's assumption in 1914 that a Zeppelin assault was imminent, thus requiring an immediate pre-emption on his part, was not unsophisticated; it was simply erroneous. Hitler's plan to destroy the RAF without escalating the war was not naive, but it represented a misjudgment of Churchill. Japanese hopes of fighting a war without inducing a maximum American effort (without suffering any bombing of the Japanese homeland) were calculated, but miscalculated. Any assumption that the other side will give up first, that the other side will first decide that the threat of bombing is unbearable, will necessarily be erroneous if both sides make it. If such miscalculations push either side into a position where it is significantly less worried about air attack, where it comes to prefer escalation, then restraints may collapse completely.

Thus, errors in judgment can easily occur among nations still mutually quite interested in restraints. Some of these errors may, in fact, become more likely as the war rolls on, and as the inflicted punishment dampens the perceptive abilities of responsive officials. Such an ongoing war may also, by itself, make nations less averse to bombing, less in favor of restraints, as sons and battles are lost, as airdromes and industrial sections of cities are destroyed, and as enemy capabilities are analyzed or disproven. The dynamics of war thus may make accurate calculations of opponents' intention both more difficult and more necessary as the war goes on; a final breakdown of restraints may well occur when the last error on one side drives the other into a real indifference to further attack.

#### RELEVANCE FOR THE FUTURE

Thus, the question finally arises as to how much of this past dynamic tendency toward unrestrained war should be projected into the future. The hardening of missile sites may have now removed the destabilizing offensive advantage of acrially-delivered weapons that has complicated our strategic problem so much. One might, in fact, argue that the offensive disabling threat of bombers was always overrated prior to 1945, and that the technology required to make this threat real in the 1950's also naturally served to remove the threat quickly. Yet the new "hardening" of weaponry pits the technology of "self-contained" missile launching systems against the guidance technology of incoming missiles; it could not (and cannot) be predicted that rapid technological progress (for example, on Polaris) would always have sufficed to preserve an advantage for the

defense. While the assumptions from 1900, perhaps even to 1950 the possibility still hangs over us arise with new guidance and anti-

Nevertheless, for the immediate the advantage of the offense has that our burden of strategic soph ened. Perhaps most importantly, hurried in deciding whether an will under almost all circumstance the enemy attack, and then to guesses as to the imminence of wa able impact. Yet it is precisely i bilities that now may be so secur man error have arisen, and there lation which may not be so easily se

While the absence of a disabling possibility and threat of violent t no retaliation (and of an irresistil attempt to deter minor actions of probability threat of all-out war, c scribed, retaliatory blow. To thre in testing and challenging a thr nation may indeed now be able t struction will really be inflicted u to the prospect of such destructi ently inflicted because of miscalc tion may still retaliate, and a mu can still occur. It was pointed o immunity from terror raids by p missile defenses) *might* make a likely; a similarly threatening "i so much destruction on one sic attacks.

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much of this past dynamic be projected into the future. Now removed the destabilizing weapons that has complicated in fact, argue that the offense, overrated prior to 1945, and threat real in the 1950's also. Yet the new "hardening" "stained" missile launching system coming missiles; it could not biological progress (for example, preserve an advantage for the

defense. While the assumptions and fears of strategists were premature from 1900, perhaps even to 1950, they were not inherently wrong and the possibility still hangs over us that an offensive advantage can again arise with new guidance and anti-submarine warfare systems.

Nevertheless, for the immediate future it may be safe to assume that the advantage of the offense has been (or is about to be) removed, and that our burden of strategic sophistication is, therefore, somewhat lightened. Perhaps most importantly, one would then no longer have to be as hurried in deciding whether an enemy air attack is on its way, since it will under almost all circumstances be militarily preferable to wait out the enemy attack, and then to respond and retaliate at leisure. Wrong guesses as to the imminence of war lose, therefore, most of their undesirable impact. Yet it is precisely in the application of the military capabilities that now may be so secure that many historical instances of human error have arisen, and there still remains a crucial problem of calculation which may not be so easily solved.

While the absence of a disabling capacity would eliminate much of the possibility and threat of violent total disarmament, of total victory with no retaliation (and of an irresistible urge to pre-empt), nations will still attempt to deter minor actions of their opponents by conjuring up a low-probability threat of all-out war, or a high-probability threat of a circumscribed, retaliatory blow. To threaten effectively one may have to inflict; in testing and challenging a threat, one may stumble into infliction. A nation may indeed now be able to wait to see whether unacceptable destruction will really be inflicted upon it, instead of reacting pre-emptively to the prospect of such destruction; but if such destruction is inadvertently inflicted because of miscalculations on either side, the aggrieved nation may still retaliate, and a mutually unwanted escalation to all-out war can still occur. It was pointed out earlier that a unilateral acquisition of immunity from terror raids by perfection of air defenses (today of anti-missile defenses) *might* make all-out attacks *by* the immune side very likely; a similarly threatening "immunity" can be achieved by inflicting so much destruction on one side that it becomes indifferent to further attacks.

Most of the possibilities for error in the handling of air weapons will still, therefore, be as relevant even if the stability problem is someday no longer with us. Cities may be hit because of errors in navigation; the communications chain of command may be defective; the value great



powers attach to the portion of their cities left undestroyed may be overrated; or the value of other items may be underrated relative to these cities.

Yet a need, somehow, to boost the fear of war, to deter any limited conquests the enemy might accomplish under the nuclear umbrella, may, in fact, accentuate these problems if it leads to deliberate or inadvertent proliferation. When smaller states devise or are given massive air weapons of their own, such types of error become even more likely. Smaller states may field very vulnerable types of missile and air forces, if they are unable to pay for hardening or concealment, and some of the tensions relevant to disabling capabilities will again become significant. Moreover, in the case of small states, the danger of miscalculating value is even more severe; most states will be prepared to suffer extreme destruction rather than lose sovereignty (some will not). As strategic weapons proliferate, more and more items can, by their loss, trigger an end to all restraints.

Attempts at deliberate proliferation are easy to find in the past, for instance, in United States air aid to China and Great Britain. Such a "spread" occurred, however, before the range of air weapons had reached the point where a national bomber force could immediately reach every target. An air force for China may have been preferable to having no air force at all capable of bombing Japan; it established a capability to bomb more than the resolve to do so. Proliferation today precisely establishes the resolve, since all the capabilities are already unrestricted in range.

Another tendency similarly complicating our strategic problem, even in the case of stability, is the possibility of automation in strategic decision-making. In the same sense that proliferation might be tolerated to deter enemy actions not otherwise deterred, retaliation can be made even more automatic. At the extreme is the concept of the "doomsday machine" which is wired *automatically* to go off and destroy the world if any atomic weapon is exploded on one's territory; less extreme is the policy of issuing high-yield weapons to field commanders on the assumption that these commanders are themselves likely to introduce these weapons, if they should be cut off in the melee of battle.

The probability that nuclear weapons will veer onto unintended targets (or even fire accidentally) must also be reckoned with, although this may be less likely than sometimes supposed. The fear that destructive machines will not behave as expected is, of course, not new; today's problem is very analogous to the inaccuracy of bombaiming in the two World

Wars. Intended restraints, of course, and this could lead to severe scale.

A last factor, perhaps in the atomic age, is the distinction has become the distinction such a qualitative restraint until some other obvious capability to draw such qualitative; when one distinction. While we previously may have been replaced by the nuclear bomb is used, the next qualitative established than in the days of

In over-all summation, the reasons have been upon the weapons or palliatives exist for circles, no sure technologic usually in reputation, have threats. The response has its lack of subtlety, but perhaps the bomber threat to fulfillment past might be less so in an increase in stability engendered ventures where other error maintenance of restraints and it is as inaccurate to say that say that the experience is en



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A last factor, perhaps increasing chances of dangerous miscalculation  
in the atomic age, is the degree to which the nuclear-conventional dis-  
tinction has become the principal focus of qualitative restraint. Once  
such a qualitative restraint is broken, it is difficult to restore any limit  
until some other obvious qualitative distinction is reached. The human  
ability to draw such qualitative distinctions is, however, not infinitely tax-  
able; when one distinction is stressed, others erode for lack of attention.  
While we previously may have had a series of qualitative steps burned  
into the political consciousness of the major powers, these may have now  
been replaced by the nuclear-conventional distinction. When one atomic  
bomb is used, the next qualitative distinction may then be less easily es-  
tablished than in the days of simple, high-explosive bombs.

In over-all summation, the coupled threats of disabling and terror weap-  
ons have been upon the world's consciousness for some time. Few diver-  
sions or palliatives exist for the threat, and despite astute efforts in some  
circles, no sure technological escape has been found. States, in fact and  
usually in reputation, have had to exercise restraints in response to these  
threats. The response has itself been thoughtful, and it has not normally been  
a lack of subtlety, but perhaps an overoptimistic subtlety, that has brought  
the bomber threat to fulfillment. Some errors that were dangerous in the  
past might be less so in a world with no disabling capabilities, but any  
increase in stability engendered here might tempt nations into daring  
ventures where other errors are significant and possible. Problems in the  
maintenance of restraints will thus continue to be with us in this area;  
it is as inaccurate to say that we are unprepared by experience as it is to  
say that the experience is encouraging.